

A photograph of a row of colorful brick townhouses in New York City. The buildings are primarily red and orange brick, with some white brick on the left. They have multiple stories, many windows with black frames, and external fire escapes. Small balconies with plants are visible. A large green text box is overlaid on the left side of the image.

Modeling NYC Apartment Rental Pricing on Craigslist

by Austin Poor

Agenda

- Methodology
- Results
- Conclusions / Future Work
- Appendix



Intro

Median US Rent is **28% of Income**.
NYC Rent is **37 % of Income**

Finding an affordable apartment in NYC
can be really hard.

Craigslist is a great place to find
affordable apartments




Methodology

- 9,000 Craigslist apt postings (NYC area)
- Used Python, Requests, and BeautifulSoup
- Stored the data with SQLite

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\$1799 / 1br - 675ft² - 1 Bedroom Rental in Elevator Building! NO SECURITY DEPOSIT! (621 Avenue Z)

image 1 of 11



621

1BR / 1Ba
open house
sunday 20
monday 21
tuesday 22


application credit che
broker fee
cats are O

This newly renovated high 1st floor 1 bedroom apartment rental with windowed bathroom and eat-in-kitchen with stainless steel appliances is located in a post-war elevator building. It is just a short walk from excellent shopping, schools, parks, houses of worship, Crown Island Hospital, NetPort Market, MatchPoint, Retro Fitness, NYS DMV, Luma I

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\$3000 / 3br - ♥♥♥♥♥ 3BdS+ 2.5BathS- Duplex! w/ Parking<---FACIL VEA HOY~♥♥ (QUEENS + Live like a Boss)

image 1 of 9




3BR / 2.5Ba
available now
apartment
no smoking
off-street parking

115th st near 10ave
(google map)

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\$850 / 1br - Spacious 1BR apartment conveniently located (2333 Loring Pl N)

image 2 of 4



2333 Loring Pl N near W Fordham Road
(google map)

1BR / 1Ba
apartment

CONTACT LANDLORD: robertsman916@gmail.com

Spacious 1BR apartment conveniently located in a well maintained building with a live-in super. This unit features a large living room, king sized bedroom, plenty of natural light through oversized windows, great closet space and beautifully maintained hardwood floors. The building is located only blocks from the B/D & 4 trains and conveniently close to the Metro North (Hudson line) and Major Deegan, as well as some of the best dining, shopping and entertainment in the neighborhood.

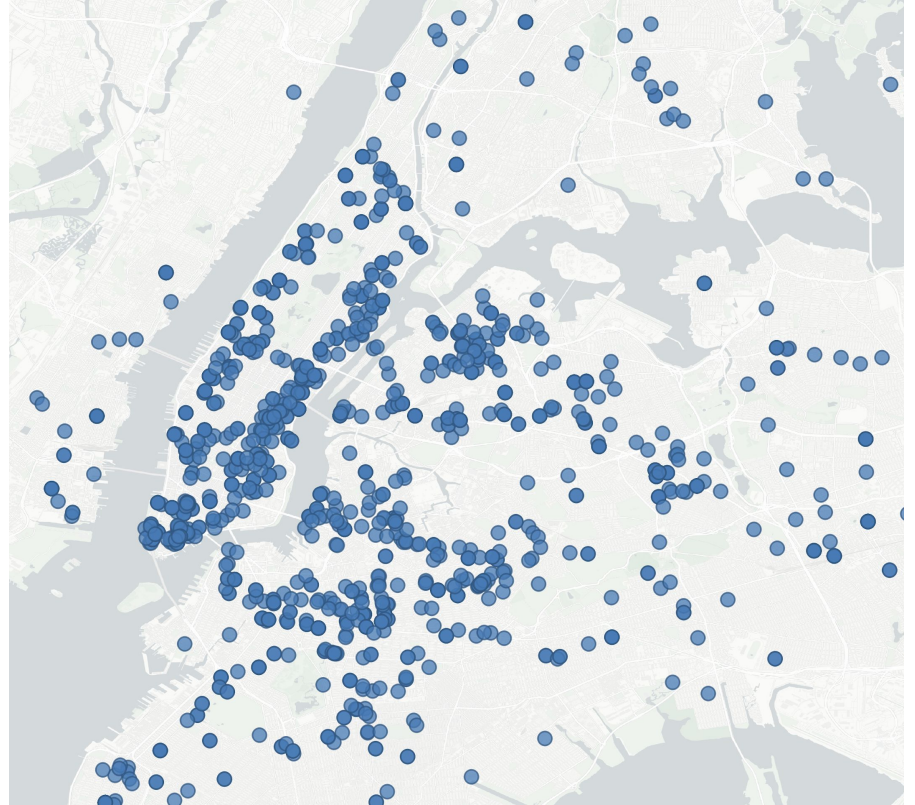
• do NOT contact me with unsolicited services or offers



Methodology

Cut down data from 9,000 rows
to 2,000 rows

Used lat/lon to calculate borough
and neighborhood





Methodology

High Variance Data

Best Results Using a Linear Model with
Degree 3 Polynomial Transform

Features

Price

of Images in Post

Latitude / Longitude

Sqft

of Bedrooms

Dogs Allowed?

Cats Allowed?

Borough (Dummy Variable)



Results

- Final R^2 Score: 0.768
- Caveat: High Variance Data Makes Model Unstable
 - Not overfit but may be hard to generalize
 - Need to collect more data

	No Polynomial	Polynomial (degree 3)
Train	0.570	0.806
Validate	0.591	0.817
Test		0.768



Conclusion / Future Work

- **Gather More Data**
 - Cut down on number of features
 - Use LASSO Cross Validation
- **Improve the MVP**
 - Site or Chrome Extension for finding good deals on apartments



Thank you.

Appendix

Price and Sqft Distributions

